

**REMARKS**

Claims 1-11 remain in the application. Claims 1-2, 6, 8-9, and 11 have been amended. Claims 12-36 are new.

Amended claims 1-2, 8-9 and 11 all claim that the valve insert is made from an “elastomeric material having an increased resistance to a fluorine containing gas as compared to resistance provided by fluoroelastomers.” Support for the amendment to claims 1-2, 8-9 and 11 is found on page 2 lines 9-10, page 4 lines 28-30 and page 6 lines 14-16. No new matter has been introduced.

Applicants respectfully submit that amended independent claims 1-2, 8-9 and 11 are not anticipated by *U.S. Patent No. 5,370,507* (“Dunn et al.”). In view of the foregoing amendments, Applicants respectfully submit that Dunn et al. does not disclose that o-ring (34) and ball (29) are “both made of a fluoro-elastomeric material.” *Office Action*, ¶ 2. In contrast, Dunn et al. disclose that all wetted parts of the pump are made of fluoroplastic material (*see Abstract, claims 2-3, 5, 7, 11, and Col. 5 lines 13-15*), which has different mechanical properties than elastomeric material. Elastomers have deformation properties that enable the elastomeric insert of the present invention to form a gas-tight seal when under the weight of the ball. *Page 7 lines 9-11*. Dunn et al. fail to disclose that o-ring (34) is made of an elastomeric material as claimed in each of amended independent claims 1-2, 8-9 and 11. Accordingly, Applicants respectfully submit that claims 1-2, 8-9 and 11 are not anticipated by Dunn et al.

In addition, not only do Dunn et al. fail to disclose that o-ring (34) is made from an elastomeric material, but furthermore that the elastomeric material has “an increased resistance to a fluorine containing gas as compared to resistance provided by fluoroelastomers” as claimed in each of amended independent claims 1-2, 8-9 and 11. Accordingly, Dunn et al. fail to disclose each and every element of amended independent claims 1-2, 8-9 and 11 and thus, these claims are not anticipated by Dunn et al.

Moreover, independent claim 8 not only claims an “elastomeric material having an increased resistant to a fluorine containing gas...,” but further claims “a cast body part.” In contrast to the Examiner’s implicit assertion, Dunn et al. do not disclose that any of the body parts are cast body parts. Accordingly, for this further reason, Applicants submit that claim 8 is not anticipated by Dunn et al.

Claims 3 and 5-7 depend directly from amended independent claim 1. Thus, for at least the foregoing reasons, claims 3 and 5-7 are also not anticipated by Dunn et al.

In addition, amended claim 3 is furthermore not anticipated by Dunn et al. because Dunn et al. fail to disclose or even suggest that the ball is made of a ceramic material.

Amended claim 6 is not anticipated by Dunn et al. for the further reason that, as stated above, Dunn et al. disclose that o-ring (34) is made from a fluoroplastic material and not from a perfluoroelastomer material as claimed in amended claim 6.

Moreover, Dunn et al. do not disclose each and every element of claim 7 because, as mentioned above, Dunn et al. fail to disclose any cast body parts. Thus, Dunn et al. do not disclose that the “valve body is a casting” as claimed in claim 7.

Accordingly, for these further reasons, Applicants respectfully submit that claims 3 and 5-7 are not anticipated by Dunn et al.

Claim 10, which depends directly from amended independent claim 9 is similarly not anticipated by Dunn et al. for at least the foregoing reasons with respect to claim 9.

Applicants submit that new dependent claims 12-20, which depend either directly or indirectly from independent claims 1-2 and 8-9, are also not anticipated by Dunn et al. for at least the reasons set forth above with respect to claims 1-2 and 8-9. Moreover, Dunn et al. do not disclose each and every element claimed in dependent claims 12-20. Indeed, Dunn et al. do not disclose that “the ball comprises a corrosion resistant metal” as claimed in claims 12, 15, 18 and 20. Similarly, Dunn et al. fail to disclose that “the corrosion resistant metal is stainless steel” as claimed in claims 13 and 16. Dunn et al. also do not disclose that the “valve body is a metal casting” as claimed in claims 14, 17 and 19.

Applicants respectfully submit that Dunn et al. also fail to disclose each and every element of new independent claim 21. New independent claim 21 claims a valve “wherein the valve seat comprises a perfluoroelastomer material.” Dunn et al. disclose that o-ring (34) is made from a fluoroplastic material and not a perfluoroelastomer material as claimed in claim 21.

Accordingly, claim 21 is not anticipated by Dunn et al.

New dependent claims 22-36 depend either directly or indirectly from claim 21, so for at least the foregoing reasons, claims 22-36 are not anticipated by Dunn et al. In addition, claims 22-23 are furthermore not anticipated by Dunn et al. because, as mentioned above, Dunn et al. fail to disclose a cast body part. Dunn et al. also fail to disclose each and every element in

dependent claims 24-25 because Dunn et al. disclose that o-ring (34) is a fluoroplastic material and not a perfluoroelastomer material as claimed in claims 24-25. In addition, Dunn et al. fail to disclose that the ball is coated with a non-stick material as claimed in claims 29-30 and 32-33. Moreover, claims 31-32 are further not anticipated by Dunn et al. because Dunn et al. do not disclose or even suggest that the ball comprises a ceramic material. Accordingly, Dunn et al. do not disclose each and every element of dependent claims 22-36.

The Examiner further rejected claims 1-2 and 8 under 35 U.S.C. § 102(b) as being anticipated by *U.S. Patent No. 5,478,216* ("Neward"). Applicants respectfully submit that the rejections of claims 1-2 and 8, as amended, have been obviated by the amendments presented in the Listing of Claims section. In particular, Applicants respectfully submit that like Dunn et al., Neward fails to disclose that o-ring (45) is made from an elastomeric material as claimed in amended claims 1-2 and 8. Indeed, Neward makes no mention of the material of construction of o-ring (45). Moreover, Neward fails to disclose that o-ring (45) is an "elastomeric material having an increased resistance to a fluorine containing gas..." as claimed in amended claims 1-2 and 8. Accordingly, amended claims 1-2 and 8 are not anticipated by Neward.

Moreover, Neward also fails to disclose that the ball is displaceable by pressurized gaseous fluid in the inlet or by gas pressure on an upstream side thereof as claimed in claims 1-2 and 8. Neward discloses that "the atmosphere contacts the steel ball." *Col. 3 lines 18-20 (Emphasis added)*. Neward further discloses that "when the...pressure inside the chamber 30 and vacuum limiter 40 is reduced, the pressure on the steel ball 44 is less on the inside of the vacuum limiter than on the area of the steel ball 44 exposed to atmosphere." *Col. 3 lines 26-30*. Hence, the ball of Neward experiences no gas pressure (i.e. atmospheric pressure) on the upstream side or inlet, rather the ball is displaced due to the vacuum created in vacuum chamber 30. *Col. 3 lines 26-30, Figure 4*. Similarly, Neward fails to disclose that the ball is displaceable by gas pressure or a pressurized gaseous fluid on the upstream side of the ball as claimed in claims 1-2 and 8. Indeed, the ball of Neward is not displaced by pressure at all. Accordingly, Neward does not disclose each and every element claimed in claims 1-2 and 8 and thus, amended claims 1-2 and 8 are not anticipated by Neward.

In addition, independent claim 8 not only claims that the ball is displaceable by pressurized gaseous fluid in the inlet or by gas pressure on an upstream side, but further claims "a cast body part." In contrast to the Examiner's implicit assertion, Dunn et al. Neward also fails to disclose

that any of the body parts are cast body parts as claimed in claim 8. Thus, for this additional reason, claim 8 is not anticipated by Neward.

Claims 3, 5, and 7 depend directly from claim 1. Thus, for at least the foregoing reasons, claims 3, 5, and 7 are also not anticipated by Neward.

In addition, amended claim 3 is furthermore not anticipated by Neward, because Neward fails to disclose or even suggest that the ball comprises a ceramic material.

Moreover, Neward does not disclose each and every element of claim 7 because, as previously mentioned, Neward does not disclose any cast body parts. Thus, Neward does not disclose that the “valve body is a casting” as claimed in claim 7.

Accordingly, for these further reasons, Applicants respectfully submit that claims 3, 5, and 7 are not anticipated by Neward.

The Examiner also rejected claim 4 under *35 U.S.C. § 103(a)* as being unpatentable over Dunn et al. in view of *U.S. Publication No. 2002/0047025 A1* (“Ray”). Claim 4, which depends directly from claim 3 and indirectly from amended claim 1, claims that the “ball is coated with a non-stick material to prevent sticking to said valve seat.” Amended claim 3 claims that the ball comprises a ceramic material. The Examiner asserted that it would have been obvious to provide the ball of Ray in the apparatus of Dunn et al. in order to form a good reliable seal. Applicants respectfully submit that neither Dunn et al. nor Ray, either alone or in combination, achieve the invention as claimed in claim 4. As mentioned above, Dunn et al. fail to teach or even suggest an insert made of an elastomeric material. Moreover, Dunn et al. fails to teach an “elastomeric material having an increased resistance to fluorine containing gases...” as further claimed in amended claim 1. In addition, neither Dunn et al. nor Ray teach that the ball comprises a ceramic material. Accordingly, the combination of Dunn et al. with Ray does not achieve the invention as claimed in amended claim 1, or amended claim 3 from which claim 4 depends, and thus, claim 4 is not rendered obvious in view of Dunn et al. and Ray.

Applicants respectfully submit that not only are independent claims 1-2, 8-9, 11 and 21 not anticipated by Dunn et al. or Ray in accordance with the Examiner’s rejections, but claims 1-2, 8-9, and 11 and new claim 21 are not obvious in view of Dunn et al. and Ray in combination. Neither Dunn et al. nor Ray teaches an insert comprising an elastomeric material or a perfluoroelastomer material as claimed in claims 1-2, 8-9, 11 and 21. Furthermore, neither Dunn et al. nor Ray teach that the insert has an increased resistance to fluorine containing gas as

claimed in claims 1-2, 8-9, and 11. Accordingly, neither Dunn et al. nor Ray, either alone or in combination, render claims 1-2, 8-9, 11 and 21 obvious. Thus, although claims 1-2, 8-9, 11 and 21 have not been so rejected, they are not rendered obvious by Dunn et al. in view of Ray.

The Examiner further rejected claim 4 as being obvious over Neward in view of Ray. Applicants respectfully submit that each of Neward and Ray fail to teach an insert made from an elastomeric material having an increased resistance to fluorine containing gases as claimed in claim 1 from which claim 4 indirectly depends. Moreover, both Neward and Ray fail to teach or even suggest that the ball comprises a ceramic material as claimed in claim 3. Thus, neither Neward nor Ray, either alone or in combination, achieve the invention as claimed in claim 4.

In addition, Applicants moreover submit that Neward teaches away from dependent claim 4. Claim 1 from which claim 4 depends indirectly, claims that the “ball is arranged to seat against the valve seat to prevent passage of gaseous fluids from the outlet end to the inlet end.” Neward teaches a hand-held vacuum pump having a vacuum limiter wherein “the ball check valve 60 is adjustable and operates to limit the amount of vacuum pressure that the pump 10 can pull.” *Col. 2 lines 37-40 (Emphasis Added)*. Indeed, the apparatus of Neward permits air to flow into outlet port 39. *Figure 4, Col. 3 lines 26-34*. Claim 1 further claims that the ball is displaceable “from the valve seat by pressurized gaseous fluid in the inlet end.” In contrast, Neward teaches that its ball is displaced from o-ring (45) due to the vacuum created in the vacuum chamber 30 (*see Col. 3 lines 26-34*) and not by pressurized gaseous fluid as claimed in claim 1. Accordingly, Neward teaches away from dependent claim 4 and does not render claim 4 obvious.

Claims 2, 8-9, and 11 and new claim 21 are similarly not rendered obvious in view of Neward and Ray, either alone or in combination, for at least the reasons set forth above. That is, neither Neward nor Ray achieve the present invention as claimed in amended independent claims 2, 8-9, and 11 and new claim 21. Moreover, Neward teaches away from claims 2, 8-9, 11 and 21 for the above-mentioned reasons. Furthermore, claims 3-7, and 10, and new claims 12-20 and 22-36 all depend either directly or indirectly from claims 1-2, 8-9, 11 and 21. Thus, for the above-mentioned reasons, dependent claims 3-7, 10, 12-20 and 22-36 are not obvious in view of Neward, either alone or in combination with Ray.

The Examiner also rejected dependent claim 6 as being obvious over Neward in view of Dunn et al. Amended claim 6, which depends from amended independent claim 1, claims that the elastomeric material is a perfluoroelastomer material. Dunn et al. teach a fluoroplastic o-ring

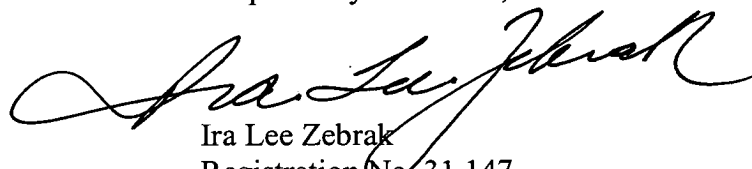
(34) as contrasted to claim 1 which claims an annular insert comprising an elastomeric material. Moreover, neither Dunn et al. nor Neward teach an insert made from an "elastomeric material having an increased resistance to fluorine containing gases" as claimed in amended claim 1. Furthermore, neither Dunn et al. nor Neward teach or even suggest that the o-rings are made from a perfluoroelastomer as claimed in amended claim 6. Accordingly, Applicants respectfully submit that claim 6 is not obvious in view of Dunn et al., alone or in combination with Neward.

Amended independent claims 2, 8-9, 11 and 21 are also not rendered obvious by Dunn et al. in view of Neward for the foregoing reasons. In addition, dependent claims 3-7, 10, 12-20 and 22-36 which depend either directly or indirectly from independent claims 2, 8-9, 11 and 21 are also not rendered obvious by Dunn et al. in combination with Neward for the reasons set forth above.

In view of the foregoing remarks, Applicants respectfully submit that claims 1-36 are neither anticipated nor rendered obvious in view of Dunn et al., Neward or Ray, either alone or in combination. Accordingly, Applicants respectfully submit that claims 1-36 are allowable and that the application be allowed and promptly passed to issue.

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